DOCUMENT RESUME

ED 438 263 SP 039 011

AUTHOR	Inoue, Yukiko; Jackson, Marilyn
TITLE	Collegial Training and Innovative Creative Teaching for Education Students in Guam.
PUB DATE	2000-01-00
NOTE	16p.; Paper presented at the Annual International Conference on Creative Teaching (3rd, Lucerne, Switzerland, January 5-8, 2000).
PUB TYPE	Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Collegiality; Cooperative Planning; *Creative Teaching; Early Childhood Education; Higher Education; Language Arts; Lesson Plans; Preservice Teacher Education; Student Attitudes; Teamwork
IDENTIFIERS	Guam

ABSTRACT

College students' understanding of collegiality is a component of teacher preparation in the Guam Public School District, in order to improve the quality of curricula. Twenty-one college students enrolled in a Language Arts in Early Childhood course were required to practice techniques of the interactive collegial relationship. This study examined how students' lesson plans were enhanced by collegial interaction; how satisfied the students were with that interaction in the course; how learning was enhanced by computer integration into the language arts instruction; and what kind of research is needed to help education students in collegial training. At the end of the semester, students completed the Collegiality Training Questionnaire, consisting of four sections: collegial interaction, computers as learning tools; open-ended questions; and demographics. Data analysis highlighted advantages to this style of learning, including: students felt a sense of community in the class, and students experienced the strength of working in groups. Major disadvantages noted by students were time constraints and a lack of peer cooperation. (Contains 16 references.) (SM)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 438 263

COLLEGIAL TRAINING AND INNOVATIVE CREATIVE TEACHING FOR EDUCATION STUDENTS IN GUAM

Yukiko Inoue, Ph.D.
Foundations and Educational Research
College of Education, University of Guam
UOG Station, Mangilaõ, Guam 96923 USA
E-mail: yinoue@uog.edu
Phone: 1-671-735-2447 Fax: 1-671-734-3651

Marilyn Jackson, Ed.D.
Early Childhood Education
College of Education, University of Guam
UOG Station, Mangilao, Guam 96923 USA
E-mail: mjackson@uog.edu

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Y. Inoue

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Paper prepared for presentation at the 3rd International Conference on Creative Teaching in Lucerne, Switzerland, January 5-8, 2000.

SP039011

BEST COPY AVAILABLE

COLLEGIAL TRAINING AND INNOVATIVE CREATIVE TEACHING FOR EDUCATION STUDENTS IN GUAM

Yukiko Inoue, Marilyn Jackson
UNIVERSITY OF GUAM

Abstract

This study was to explore college students' realization toward collegiality, which was a component of teacher preparation to improve the curriculums for children in the Guam Public School District. Students in the Language Arts in Early Childhood course engaged in collegial and innovative creative ways of learning. Data were gathered through survey instrument ($N = 21$). Results of the study suggested that advantages of this style of learning include: Students can feel a sense of community in the class and can experience that "two heads are better than one." Yet students emphasized the disadvantages, too. Findings and implications were documented.

KEYWORDS: Teacher Training, Collegiality, Innovative Creative training, College Instruction, Higher Education, Multicultural Education

INTRODUCTION

In the College of Education at the University of Guam, the Early Childhood Teacher Preparation Program (particularly in the undergraduate course of Language Arts in Early Childhood) is currently training students in collegiality in the promotion of high standards of teacher training and teacher education in general. This important ingredient is the basic support for students during field experience and student teaching. This training approach requires students to work closely together in terms of problem solving as well as sharing ideas, skills, knowledge, and responsibilities. Students also work in a laboratory setting that requires partners to complete specific assignments, especially in computer literacy training since students in the 21st century must master sophisticated information age learning media (that is, tool software such as graphics, database, spreadsheet, multimedia, and Internet) and must become accountable or demonstrate learning more directly than did students of the past. More important, teachers themselves must have and maintain sufficient knowledge and skills in instructional technology, even though hardware and software are changing rapidly. As noted by Woolley (1998), for instance, technology integration must go beyond the "how-to" workshops in order to facilitate understanding about technology's relationship to teaching and learning. Woolley also stated that it should involve

hands-on learning, reflecting on experiences, and applying technology to instructional design, planning, and forging collegial connections.

LANGUAGE ARTS IN EARLY CHILDHOOD COURSE

The goals of this Language Arts in the Early Childhood course are (1) to gain a better understanding of what it means to teach the language arts in an integrated manner, (2) to gain knowledge of the teacher's role in supporting language development, (3) to understand the relationship between oral communication, creative dramatics, and original thinking throughout all of the language arts, (4) to gain skills in the application of knowledge about emergent readers and writers, and (5) to develop a repertoire of activities for a literature-based curriculum. The following were two of the projects for this course:

Thematic and literature-based language arts unit: Integrated, thematic organization of curriculum is appropriate for young children. Specific topics or themes give children many opportunities to explore a concept and to more actively participate in their own learning. The unit and lessons have already been created and students are responsible for implementing, making revisions and extensions to further develop the lessons, to improve upon and integrate all the language arts skills.

Micro teaching: Teaching the integrated language arts and emergent reading are complex and exciting with many skills needed by the teacher. Micro teaching means teaching four lessons and making a "video tape" for two back-to-back lessons from these thematic units. The student and his or her partner will give and overview and analyze the teaching of the video tape.

In sum, the purpose of this course is to develop a climate of cooperation and not competition and encourage students to enhance their professional development based on the notion that language arts are tools that help children better explore the language arts. Students engage in the course work as a team member through peer coaching, listening attentively to the instructor and classmates, and respecting viewpoints that may differ decidedly from their own. That is, having good interpersonal skills and being a team player or leader are greatly encouraged. Based on the the theorized notion by Compton et al. (1998) and Laurel, Chapman, and Hoffmeyer (1990-91), peer coaching is beneficial for incorporating accountability, promoting professional, and personal development, thus, increasing teacher retention.

CREATIVITY AND CREATIVE EXPRESSION

If teachers are expected to teach creativity or to help children express their creative ability, teachers themselves must be creative. The premise of the Language Arts in Early Childhood course is that the teacher wants students to plan their units and themes asking themselves questions over and over again such as:

1. How can I create an environment that will promote creativity?
2. Am I allowing children to think and act creatively?
3. How can I develop a receptive attitude toward the creative expression of children?
4. Am I able to recognize and acknowledge creativity in children?

The objective of this course is thus to help students develop their own natural creative potential and understand that their creative and original thinking and the creative process should permeate the entire curriculum. There are many ways to express one's creativity. The expressive arts (art, music, movement, dance, dramatics, and mime), language, and thought are just a few that are relevant to the language arts in early childhood. The expressive arts are important because they are the means of communicating a child's creative productivity and imaginative thinking (Jalongo, 1990). Prospective teachers preparing to work with young children play a key role as facilitators in maximizing children's creative expression, teaching children to think creatively as they make decisions, explore, and discover. As a new teacher, however, the first year can be overwhelming, very difficult and stressful. No teacher training program, no matter how good, can prepare a student completely for the real world of teaching.

REVIEW OF LITERATURE

Very little is known about the benefits of collegial training for students in teacher education. Isolation of teachers is a well documented phenomenon, and teachers should learn to work as colleagues. Studies have consistently observed that collegial interaction is not commonly a part of the teacher's professional behavior. The "closed door" mentality (Lortie, 1975; Moskowitz, 1997) that apparently seals teachers into their classroom with students and away from peers seems to be the product of both the school district in which teachers work and the university training they receive. The observation of Howsam, Corrigan, Denemark, and Nash (1976) is probably as true today as it was decades ago: "Many new teachers function in a professional desert, abandoned by the institutions where they received their preservice education, and neglected by overburdened

supervisory personnel" (p. 101). In reality, it is very rare for two teachers to meet together regularly outside of class time in order to discuss substantive issues related to their students or their own teaching; and that teachers do not analyze their teaching, explore alternatives and innovative approaches, and evaluate their teaching styles.

In a study by Compton et al. (1998), college students completed a course in collaboration and co-teaching during 15 weeks of student teaching, and authors found that even though negative aspects included reflection by cooperating teachers on their own methods and teaching styles, co-teaching had positive comments that emphasized the benefits in terms of cooperative learning and collegial training, resulting in the increased collegiality and expertise of the students. "Peer coaching provides a powerful resource in systematically linking classroom improvement, teacher development, and school improvement" (Laurel et al., 1990-91, p. 79). According to the authors, such a peer coaching training system focuses on the coaching conference and communication techniques, shared purpose, norms of collegiality, norms of continuous improvement, and structures characterized by several organizational conditions important to the coaching process.

Beginning teachers' adjustment involves not only coping with a myriad of administrative policies and procedures but also figuring out and appropriately responding to the values, norms, and politics of the adult school community (Jackson, 1987). Jackson further stated that almost all beginning teachers need to know the school's people, it's customs, its routines, its regulations, and physical arrangements before they can begin to feel comfortable. The isolation and the multicultural setting adds to the "reality shock" experienced by new and beginning teachers in Guam. Jackson identified perceived problems and support of teachers who are new to the Guam Public School – both beginning and experienced teachers. In 1997, Alvarado conducted a follow-up study of beginning and new teachers to the Guam Public School System. Alvarado noted that the transition from being a preservice teacher to a full-time teacher was often a difficult one. The problems of beginning teachers in Guam have been well documented, and the isolation of teachers is a well documented phenomenon. Teachers are alone in a classroom, with only trial and error as a guide, and little or no assistance is available as they begin their career. Beginning teachers need support. In order to provide better support for early childhood educators new to the profession of teaching, the early childhood teacher training program has made a commitment to aid graduates in a smooth transition as a beginning teacher. The role of any teacher training program should be to

teach and train students of the significance of learning to work as colleagues. The benefits of collegial interaction has suggested that one of the most dependable indicator of quality in the medical profession is the degree to which the physician engages in regular collegial interaction. Professions that successfully engage in self-regulation are characterized by a high degree of collegialship.

Although multicultural education is not a new concept, the multicultural perspective will continue to be a priority for higher education in the new millennium. It should be noted that in addition to the Chamorros (the indigenous people of Guam) and "stateside" Americans, the University of Guam has a large student population of Filipinos, Chinese, Koreans, and Western Pacific islanders from Truk, Palau, the Marshall Islands, as well as the Federated States of Micronesia (comprised of Pohnpei, Chuuk, Yap, and Kosrae). This diverse student population at this University does create the perfect setting for research on collegial training to improve university teaching and learning from a multicultural perspective. In Newton's (1995) words, "It is also an education imperative to promote respect and tolerance for gender differences, racial, cultural and religious diversity and foster collaboration in the interest of national development" (p. 71). Laurel et al. (1990-91) also have emphasized that peer coaching is useful for enhancing the quality and retention of minority teachers. For the initial teachers, in some sense, feeling comfortable in the school setting was reinforced by the feeling of being able to make a special contribution [Jones, Marguire, & Watson, 1997).

Research has shown that a well-planned program aids in a smoother transition from student of teaching to a professional teacher. In the College of Education at the University of Guam, the Early Childhood Teacher Preparation program is concerned with the quality of teacher education, therefore, early childhood faculty are training students in collegiality in the promotion of higher standards of teacher training. Students work in a laboratory setting on campus and off campus early childhood environments within the community. Training students in collegiality requires partners, study sessions and numerous team projects, which are so critical. Students talk and share with one another substantive issues related to their own teaching; further, they analyze the teaching of their peers, explore alternative approaches, and analyze individual teaching and learning problems. In this type of training, students have the opportunity to experience collegial relationships characterized by openness and trust. As students engage in collegial training, they

must act as colleagues. In addition, teacher training programs must go beyond teaching about the technology to facilitate understanding about how technology relates to student learning. In short, the process of connecting technology to learning requires a change in the way teachers view technology and the role played by technology resources (Woolley, 1998).

PURPOSE OF THE STUDY

The purpose of this study was, therefore, to explore college students' realization toward collegiality, which was a component of teacher preparation to improve the quality and creative curriculums for children in the Guam Public School District. In collegial training, students were required to practice the technique of the interactive collegial relationship. In this type of training, students had opportunities to experience collegial relationships characterized by openness and trust. As students engage in collegial training, they must act as colleagues. The main research questions raised for this study were:

1. How are students' lesson plans enhanced by collegial interaction in the course?
2. In what ways are students satisfied with collegial interaction in the course?
3. How is learning enhanced by computer integration into the language arts instruction by collegial interaction in the course?
4. What kind of research is needed to assist education students in collegial training?

METHOD

Participants

Undergraduate students enrolled in the Language Arts in Early Childhood course offered by the University of Guam during the 1999 fall semester were the study participants (N = 21). In this course, students explored the process of teaching and learning of the most critical elements of the early childhood and elementary curriculum; the language arts of listening, speaking, reading, and writing. The teaching and learning of these critical elements were based on the assumption that the language arts are tools which help children improve literacy development and their communication skills. In developing a repertoire of activities for a literature-based curriculum, students were required to write and make revisions and extensions to further develop innovative creative lesson plans for the language arts in the course. In order to assess student attitudinal responses toward collegial interaction, a survey instrument was used; students were required to complete a

questionnaire at the end of the semester.

Survey Instrument

Collegiality Training Questionnaire (CTQ) was developed and pilot tested to ascertain student perceptions of collegial training. Further, to have good content validity (the extent to which it provides adequate coverage of the topic), CTQ was examined by a panel of faculty in the university for how well CTQ had met the standard. The 22-item questionnaire consisted of four sections: Collegial interaction, a computer as a learning tool, open-ended questions, and demographic information. The participants were asked to rate each item on the Likert-typed scale (5 = strongly agree, 4 = agree, 3 = undecided, 2 = disagree, 1 = strongly disagree).

Data Analysis

This was an exploratory study and no specific hypothesis was established. Statistical procedures using SPSS were applied to the data. First, in prioritizing the items (attitudes toward collegial interaction and computer use), the overall means (M) and standard deviations (SD) for all the respondents by each item were calculated and arranged in descending order. Then, multiple regression analysis was computed to examine the relationship between the perceived usefulness of collegial training (question item: "Collegial interaction gave me the opportunity to create innovative activities for curriculum planning.") as the dependent variable and ethnicity, age, and computer use as the independent variables. Finally, open-ended questions on collegial training were summarized and analyzed.

RESULTS AND DISCUSSION

All the students in the course completed the CTQ. Table 1 shows the demographic information about the participants of the study. All the participants were female and were rather traditional in age (62% of them were 24 years old or younger).

Table 1. Demographic Information of the Participants (*N* = 21)

Ethnicity:			**Gender:**		
Chamorro	10	(47.6%)	Female	21	(100%)
Filipino	8	(38.1%)	Male	0	(0%)
Asian/Pacific Islander	3	(14.3%)			
American	0	(0%)			
Computer Use:			**Age:**		
Always	9	(42.9%)	21 or less	9	(42.9%)
Frequently	7	(33.3%)	22-24	4	(19.0%)
Sometimes	5	(23.8%)	25-27	2	(9.5%)
Seldom	0	(0%)	28-30	3	(14.3%)
Never	0	(0%)	31 or over	3	(14.3%)

DESCRIPTIVE STATISTICS

CTQ was used primarily to determine if collegial training promoted higher standards of teacher training; and if in fact, students learn to work closely together, sharing experiences, information and responsibility. Tables 2 and 3 show attitudes toward collegial training and computer use, respectively. In general, as seen in table 2, students perceive collegial training as a form of cooperative learning, supporting the theorized notion that "to employ peer coaching is to encompass a broad range of professional growth opportunities" (Laurel, Chapman, & Hoffmeyer, 1990-91, p. 82). Responses indicated that there was strength in group work, better feedback from peers and the old cliche, "two heads are better than one" was an excellent way to promote learning. Collegial training was perceived as a form of cooperative learning, and students identified collegial training or peer interaction as a way to help build leadership skills. There were many responses related to students being motivated and stimulated to implement and complete their projects. Collegial interaction also lessened the workload and, more important, it made deadlines obtainable.

The significant part of this interaction is that it provides a type of support in which students can express new ideas and acquire new friendships. When students are able to work and support each other, they learn to respect the ideas and opinions of others. This respect is perceived as providing more opportunities for each student to give his or her advice in a risk free climate or atmosphere. Further, collegial training is a form of compatibility or being able to express ideas to others. Early childhood students believe that their preservice training should be a set of learning opportunities designed to improve their skills for the world of teaching. Responses from students suggest (1)

motivation, (2) learning from peers, and (3) open communication are key components in their training. Thus collegial interaction is valuable in providing many opportunities for sharing ideas and demonstrating creativity through close interaction. Student responses are viewed as desirable indicators that enable students to build their confidence with support from their peers. A very small percentage of students reported that they did not engage in any collegial interaction or that they were unclear of the purpose of collegial interaction. These students believe that their training has not given adequate attention to motivate them to share ideas or to help them be creative.

Although neither females nor males perceive computers as belonging to the male domain, females are more likely than males to be unsure of their ability to use computers (Makrakis, 1993). In college, males are more likely than females to take computer courses (Dambort, Silling & Zook, 1988), to use computer labs (Lockheed, 1985), and to have access to dormitory computers (Modianos & Hartman, 1990). As noted by Colley, Gale, and Harris (1994), there will be no gender difference in computer proficiency and usage. Students of this sample view a computer as a useful and indispensable learning tool, though the term "computer use" has many definitions and each participant of this study may have had a different definition in mind.

Table 2. Attitudes Toward Collegial Training

Description	*M*	*SD*
- Collegial interaction motivated me to learn.	4.81	.40
- Collegial interaction helped me to promote creative ideas through the influence of my peers.	4.76	.54
- Collegial interaction helped me better understand the importance of maintaining close/open communication.	4.71	.90
- Collegial interaction provided opportunities for sharing and building confidence through creative expression.	4.71	.64
- Collegial interaction gave me the opportunity to create innovative activities for curriculum planning.	4.62	.59
- Collegial interaction allowed me to express my creative ideas.	4.43	.98
- I did benefit from the advice, information, and suggestion from analyzing peer teaching.	4.38	1.20
- I find it difficult to work with partners for team projects.	2.19	.93
- I did not engage in the process of creating new and innovative ideas and activities.	1.62	1.02
- Collegial interaction was not effective for learning.	1.62	1.12
- Collegial interaction was not enjoyable.	1.33	.48

Table 2 (Continued)

-	I do not understand nor did I benefit from collegial interaction in this course.	1.29	.46

Table 3. Attitudes Toward Computers as Learning Tools

	Description	*M*	*SD*
-	Computers are useful for the Language Arts in Early Childhood course.	4.52	.60
-	Computers are important to my learning process.	4.48	.60
-	I feel at ease learning by using computers.	4.29	.56
-	I would rather read textbooks than learn from computer lessons.	3.19	.93
-	The use of computers is not effective for lessons and unit planing for early childhood education.	1.62	.67

Statistic Analysis

Multiple regression analysis. This analysis was conducted to find variables that significantly would influence the dependent variable (indicating that collegial interaction gave the student the opportunity to create innovative activities for curriculum planning). Only one variable (computer use; coded: 1 = always, 2 = frequently, 3 = sometimes, 4 = seldom, 5 = never) met the entry requirement to be included in the equation at the .05 level of significance (see Table 4). In other words, the more students use computers, the higher their perceptions of collegial interaction will be. The multiple R shows a moderate correlation (r = .590) between the one predictor variable (computer use) and the dependent variable. The R-Square indicates that 34.77 percent of the variance in the dependent variable was explained by the predictor variable (computer use).

Table 4. Summary of Multiple Regression Analysis

Multiple R	.58967				
R-Square	.34771				
Adjusted R-Square	.23260				
Standard Error	.51649				
Unstandardized coefficients		Standardized coefficients			
	B	Standard Error	Beta	t	Significance of t
Constant	5.041	.381		13.236	.0000
AGE	.143	.081	.374	1.777	.0935
ETHNICITY	-.048	.168	-.060	-.288	.7768
USE	-.378	.143	-.521	-2.633	.0175*

*p <. 05

STUDENT COMMENTS ON COLLEGIAL TRAINING

Responses from students to the open-ended questions provided more useful information specific to the techniques practiced in collegial training, and the CTQ provided reasons as to why students could not work as colleagues. Typical advantages are (1) cooperation, (2) team work, (3) friendships, (4) shared ideas, and (5) support, whereas typical disadvantages are (1)time constraints, and (2) lack of cooperation. The detailed student comments on collegial training can be summarized as follows:

Advantages:

- Communication line open
- Working in groups builds leadership and team work (the motto of two heads are better than one is a major plus)
- Ideas are shared and friendships are made; expand ideas and encourage, support, motivate each other
- There's strength in a group (share ideas and advice)
- Collegial interaction is motivating; collegial interaction is stimulating
- Great way to get to know peers; learn ideas from peers
- More opportunities are expressed; more learning and teaching are promoted
- Get a broad perspective by using others perspective; ideas and culture sharing are great
- Sharing of ideas; learn to respect others
- Allow closeness and friendship throughout the semester
- More ideas, great feedback; great way to elevate the workload and stress comfortably.
- Share new ideas with the help of implementing them into lessons
- Learn to work with peers; get ideas from different people and make projects more fun and better
- The advantage is to help one another with different ideas
- To work as a team
- Learn new ideas from each other; can finish the job easily and on time, team work
- Motivator; team work-cooperative learning

The most frequent advantage of collegial interaction is that it promotes the team approach in the preparation of teaching and provides support students need to express their ideas. This information revealed that when students work in a risk free environment where they can talk about their teaching practices, they would also learn to accept new ideas, opinions and views from their team members. Students need and want to feel comfortable with team peers in a group setting if

they are to share and expand their ideas and to encourage each other. The majority of students found that working as a colleague with interactability among their peers would enable a sense of closeness that resulted in new friendships. Students perceive peer coaching as a means to emphasize the significance of open communication and collaboration, and co-teaching is viewed as providing important elements of trust and cooperation (or friendship) among their peers.

The multicultural make-up of students in this study have verified the realities of diversity that is needed in learning and teaching. Teaching is also measured by the professional multicultural training readiness students possess. This case study does indicate positive learning attitudes toward the concept of multiculturalism. A good teacher training program must train students to progress and perform at a "safe" developmental level where they feel compatible in getting different ideas from different people. The majority of students stated collegial training is beneficial in learning to accept new and different ideas from different people and, in essence, this training has helped to build their leadership qualities and skills.

These findings offer standards for students during their preservice training and that they foster the use of the knowledge and skills needed in professional preparation courses of study. The internalized value of collegial training as identified by one student, should also be characterized by a fun culture sharing experience for prospective teachers.

Disadvantages:

- Conflicting schedules; leeching off on other group members; time conflicts
- Not everyone is compatible with you; if one is gone, others may suffer
- One member tries to control the project; difficult part is meeting with the members and not everyone showing up
- Time schedules differ, distance, time consuming
- Take more time at first; some people may take advantage of others and not do his or her job
- Sometimes lack of motivation and cooperation; miscommunication
- Some people are just not in the mode for collegial interaction; commitment and the schedules are different
- Meeting times-sometimes everyone cannot meet
- One person may not be cooperative
- The time-sometimes they cannot make the time to meet
- Some group members just rely on someone else to do their job; sometimes it is hard to decide the topic
- Uncooperative team members; time conflicts

The initial benefits of collegial training do provide multiple benefits, however, there were major disadvantages indicated by students. In this case study it was revealed that the consequences of working with peers and sharing the workload and responsibilities did suggest major concerns of students, that is, the lack of time and cooperation among team members. This study revealed student frustrations with time constraints described as: (1) conflicting schedules, (2) schedule commitments are different, (3) time conflict, and (4) members not showing up for meetings. Students also described and gave their account of a lack of peer cooperation as: (5) one member may do all the work, (6) one member is perceived as being uncooperative, (7) distance and meetings can be time consuming, and (8) some members may not be in the right mode for collegial interaction. These results have indicated the difficulties, frustrations, and consequences of collegial interaction.

DIRECTIONS FOR FUTURE STUDY

Although the instrument was pilot tested, it still may not be as valid as a standardized one. Yet this study is simply a first step in finding out about student attitudes toward collegial training and innovative creative learning, and replications of this study with larger samples and different settings are needed. Thus the results of the survey should be considered unique to the sample of this study. If other studies confirm the same results, then the question should be raised as to what will be the indication that students (and teachers) are able to get optimal benefits from collegial training for teacher preparation programs in higher education.

REFERENCES

Alvarado, K. O. (1998). The needs problems and support of beginning teachers in the Guam Department of Education. Unpublished master's thesis, University of Guam .

Colley, A. M., Gale, M. T., & Harris, T. A. (1994). Effects of gender role identity and experience on computer attitude components. Journal of Educational Computing Research, 10(2), 129-137.

Compton, M. V. et al. (1998). It takes two: Co-teaching for deaf and hard of hearing students in rural schools. (ERIC Document Reproduction Service No. ED 417 901)

Dambrot, F. S., Silling, S. M., & Zook, A. (1998). Psychology of computer use: Sex differences in prediction of course grades in computer language course. Perceptual and Motor Skills, 66, 627-636.

Howsam, R. B., Corrigan, D, Denemark, G., & Nash, R. (1976). Training of the American teacher. Washington DC: American Association of Colleges for Teacher Education.

Jackson, M. N. (1987). Perceived problems and support of new teachers in the Guam public schools system. Unpublished doctoral dissertation, University of Oregon.

Jalongo, M. R. (1990). The child's right to the expressive arts: Nurturing the imagination as well as the intellect. - Association for Childhood Education International, pp. 195-201.

Jones, C., Marguire, M., & Watson, B. (1997). The school experience of some minority ethnic students in London schools during initial teacher training. Journal of Education for Teaching, Vol. 23, No. 2, pp. 131-144.

Laurel, E.G., Chapman, J., & Hoffmeyer, C. (1990-91). Employing peer coaching to support teachers. Teacher Education and Practice, 6, pp. 79-82.

Lockheed, M. (1985). Women, girls, and computers: A first look at evidence. Sex Roles, 13, 115-122.

Lortie, D. C. (1975). School teacher: A sociological study. University of Chicago Press.

Makrakis, V. (1995). Gender and computing in schools in Japan: The "we can, I can't" paradox. Computers Education, 20(2), 191-198.

Modianos, D., & Hartman, J. (1990). Report on the Brandley University residential computing project. Collegiate Microcomputer, 8, 129-137.

Moskowitz, J. (1997). Reasons learned, challenges remaining. In Students of teaching to teachers of students: Teacher induction around the Pacific Rim. On-line, pp. 1-13. www. ed.gov/pubs/ APEC/ch6.html.

Newton, E. (1995). Quality in teacher education and training: The case of Barbados. European Journal of Teacher Education, Vol. 18, No. 1, pp. 69-81.

Woolley, G. (1998). Connecting technology and learning. Educational Leadership, 55, pp. 62-65.